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AUTHOR Conner, Jennifer M.; Greene, Beth G.; Lloyd, Paul
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ABSTRACT

A pilot study evaluated the instructional effectiveness of "Collections, a Harcourt Reading/Language Arts" program. A total of 40 primary-grade teachers in 4 different school districts in Texas volunteered to participate. Teachers selected two themes to pilot during a 9- to 12-week period and received training in implementing the program. Teachers administered data collection instruments--skills tests accompanying the program, the Reading Subtest of the Stanford Achievement Test, and the Texas Assessment of Academic Skills (TAAS) Practice Test. Results indicated: (1) consistent and significant test score increases at every grade level from Kindergarten through grade 3; (2) significant increases for every test and every subtest at every grade level; (3) significant gains on the TAAS Practice Test; and (4) increases were greater for grade 1 than for grades 2 and 3. Findings suggest that the program is effective and that getting such a program established in the earliest grades provides the greatest possibility of success. Contains 11 tables of data. (RS)

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Jennifer M. Conner
Beth G. Greene
Paul Lloyd

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J Conner

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A Study of the Instructional Effectiveness of *Collections, a Harcourt Reading/Language Arts Program*

This report describes one of a series of pilot studies that were conducted to evaluate the instructional effectiveness of *Collections, a Harcourt Reading/Language Arts* program.

Background Information

Harcourt School Publishers asked the *Educational Research Institute of America* (ERIA) to conduct a series of independent pilot studies to evaluate the effectiveness of *Collections*. Harcourt School Publishers sought out volunteer teachers to participate in the study; the Department of Test Services assisted in designing, securing, and scoring the data collection instruments; and ERIA conducted the study and analyzed the data that were collected. The study described in this report was conducted in the fall of the 1999-2000 school year.

Research Questions

The following research questions guided the design, procedures, and data analysis of the pilot study:

- *Is Collections instructionally effective?*
- *Do selected themes significantly increase students' understanding of key reading skills, concepts, and strategies as measured by the program's Reading Inventory*
- *As measured by the program's Reading Skills Tests?*
- *As measured by the TAAS Test?*
- *As measured by a standardized achievement test (Stanford 9)?*

Design and Procedures of the Study

Because this study was focused on the primary levels of the program, it was limited to four grades – Kindergarten, grade 1, grade 2, and grade 3.

Teachers who volunteered to participate in the study had not used the program previously. The teachers were encouraged to select two themes to pilot over a nine- to twelve-week period. They also agreed to administer data collection instruments before beginning instruction and again after completing instruction.

A total of 40 teachers volunteered to participate in the study: 12 at Kindergarten; 8 at grade 1; 10 at grade 2; and 10 at grade 3. The participating teachers came from 5 different schools in 4 different districts in Texas.

A quasi-experimental pretest-posttest design was used. Before instruction began, students were administered one or more pretests depending on their grade level. The classroom teachers administered all tests. Table 1 summarizes the data collection instruments that were used.

TABLE 1
Data Collection Instruments

Grade	Pretests	Posttests
K	• Collections K/1 Reading Inventory	• Collections K/1 Reading Inventory
1	• Collections K/1 Reading Inventory • Reading Subtest of the *Stanford Achievement Test, Ninth Edition* (Complete Battery), Level P1/Form S	• Collections K/1 Reading Inventory • Reading Subtest of the *Stanford Achievement Test, Ninth Edition* (Complete Battery), Level P1/Form S
2	• Collections 2/3 Reading Inventory • Reading Subtest of the *Stanford Achievement Test, Ninth Edition* (Abbreviated Battery), Level P1/Form S	• Collections 2/3 Reading Inventory • Reading Subtest of the *Stanford Achievement Test, Ninth Edition* (Abbreviated Battery), Level P1/Form S
3	• Collections Reading Skills Tests (matched to each theme taught) • Reading Subtest of the *Stanford Achievement Test, Ninth Edition* (Abbreviated Battery), Level P2/Form S • TAAS Practice Test (Reading Comprehension)	• Collections Reading Skills Tests (matched to each theme taught) • Reading Subtest of the *Stanford Achievement Test, Ninth Edition* (Abbreviated Battery), Level P2/Form S • TAAS Practice Test (Reading Comprehension)

Following the pretests, the teachers taught the selected themes using the resources and procedures contained in *Collections*. Teachers also received training from experienced consultants in methods of implementing and using the program. Instructional time varied from nine to twelve weeks depending on the themes taught. *Collections* was the reading/language arts program used by all of the teachers. Instruction included a broad sample of reading skills from the strands of decoding, vocabulary, comprehension, literary appreciation, and study skills.

Upon completion of the selected themes, students were administered the posttests. All data collection instruments were returned to the *Educational Research Institute of America* where they were processed. The *Stanford 9 Achievement Tests* were scored at the Harcourt Educational Measurement Scoring Center. The *Collections Reading Inventories* and the *Collections Skills Tests* were scored at ERIA, and all of the data were analyzed by ERIA.

Findings

Descriptions of each of the assessments used in the study and the assessment results are reported below:

Content of the Kindergarten and Grade 1 Reading Inventory

Kindergarten and Grade 1 Reading Inventory		
Subtest	**Kindergarten No. of Items**	**Grade 1 No. of Items**
Phonemic Awareness		
Detecting Rhyming Sounds	5	
Detecting Beginning Sounds	5	5
Detecting Ending Sounds	5	5
Graphophonemic Knowledge		
Letter Recognition	5	
Letter-Sound Relationships: Beginning Sounds	5	5
Letter-Sound Relationships: Ending Sounds	5	5
Letter-Sound Relationships: Medial Vowel Sounds		5
Initial Blend Substitution		5
Final Consonant Substitution		5
Final Blend Substitution		5
Medial Vowel Substitution		5
Word Recognition	5	5
Writing (Spelling)		5
Writing Letters	5	
Writing Words	5	5
Reading Comprehension		5
TOTAL	**45**	**65**

Kindergarten Test Results

Table 2 summarizes the Pretest and Posttest means and standard deviations for the Kindergarten Reading Inventory.

TABLE 2
Kindergarten Results

Kindergarten	Reading Inventory (45 test items)			
	Lowest Score	**Highest Score**	**Mean Score**	**Standard Deviation**
Pretest	3	44	25.77	9.09
Posttest	7	43	29.42	9.82

At kindergarten the mean *Reading Inventory* test scores improved from 58% correct to 66% correct after instruction. This increase was highly significant (t=5.161; p<.0001).

Grade One Test Results

Table 3 summarizes the Pretest and Posttest means and standard deviations for the Grade 1 Reading Inventory.

TABLE 3
Grade 1 Results

Grade 1	Reading Inventory (65 test items)			
	Lowest Score	**Highest Score**	**Mean Score**	**Standard Deviation**
Pretest	15	64	44.93	11.65
Posttest	20	64	56.11	7.68

At Grade 1 the mean *Reading Inventory* test scores improved from 68% correct to 86% correct after instruction. This increase was highly significant (t=13.817; p<.0001).

TABLE 4
Grade 1 Results

Grade 1	Stanford Achievement Tests: Grade 1			
	Lowest Score	**Highest Score**	**Mean Score**	**Standard Deviation**
Pretest: Sounds and Letters	13	40	29.9	6.6
Posttest: Sounds and Letters	8	40	35.1	5.0
Pretest: Word Reading	10	40	26.8	8.4
Posttest: Word Reading	12	40	33.5	6.2
Pretest: Sentence Reading	5	30	17.6	8.2
Posttest: Sentence Reading	3	30	22.5	6.3
Pretest: Total Reading	34	110	74.1	19.0
Posttest: Total Reading	23	110	91.0	15.7

A paired t-test for the three subtests and the total test score on the *Stanford Achievement Tests: Grade One* resulted in a significant increase (Sounds and Letters: t=10.035; p<.0001); (Word Reading: t=10.32; p<.0001); (Sentence Reading: t=6.76; p<.0001); (Total Reading: t=13.048; p<.0001).

The percentage increase in *Stanford Achievement Test Scores: Grade One* from pretest to posttest were: Letters and Sounds from 73% to 85% correct; Word Reading from 68% to 85% correct; Sentence Reading from 60% to 77% correct; and Total Reading from 67% to 83% correct.

Grade Two Test Results

Grade 2 Reading Inventory Subtests	*Grade 2 No. of Items*
Graphophonemic Knowledge	
Initial Consonant Substitution	5
Initial Blend Substitution	5
Final Consonant Substitution	5
Final Blend Substitution	5
Medial Vowel Substitution	
Word Recognition	10
Writing (Spelling)	10
Reading Comprehension	15
Total	55

Table 5 summarizes the means and standard deviations of the scores on the pre-test and the post-test for the Grade 2 Reading Inventory.

TABLE 5
Grade 2 Results

Grade Two	**Reading Inventory (55 test items)**			
	Lowest Score	**Highest Score**	**Mean Score**	**Standard Deviation**
Pretest	19	55	43.03	7.72
Posttest	26	55	47.13	5.64

At grade 2 the mean *Reading Inventory* test scores improved from 78% correct to 85% correct after instruction. This increase was highly significant ($t=7.098$; $p < .0001$).

TABLE 6

Grade 2	**Stanford Achievement Tests: Grade 2**			
	Lowest Score	**Highest Score**	**Mean Score**	**Standard Deviation**
Pretest: Word Study Skills	6	20	15.2	3.4
Posttest: Word Study Skills	9	20	17.0	3.1
Pretest: Word Reading	2	20	15.2	3.9
Posttest: Word Reading	3	20	16.6	3.1
Pretest: Reading Comprehension	11	30	24.4	4.8
Posttest: Reading Comprehension	12	30	26.3	4.7
Pretest: Total Reading	23	70	55.1	10.9
Posttest: Total Reading	28	70	60.0	9.6

A paired t-test for the three subtests and the total test score on the *Stanford Achievement Tests: Grade Two* resulted in a significant increase (Word Study Skills: t=7.533; p<.0001); (Word Reading: t=4.789; p<.0001); (Reading Comprehension: t=5.476; p<.0001); (Total Reading: t=7.936; p<.0001).

The percentage increase in *Stanford Achievement Test Scores: Grade Two* from pretest to posttest were: Word Study Skills from 76% to 85% correct; Word Reading from 76% to 83% correct; Reading Comprehension from 81% to 88% correct; and Total Reading from 79% to 86% correct.

Grade Three Test Results

Grade 3 Skills Tests Subtests	**Theme 1 Test**	**Theme 2 Test**
Decoding Phonics		
Prefixes and Suffixes	6	
Vocabulary		
Selection Vocabulary	20	16
Vocabulary in Context		6
Reading Comprehension		
Predict Outcomes	4	4
Draw Conclusions		
Literary Concepts		
Story Elements (Character, Setting Plot)		4
Total	30	30

The TAAS Practice Test constructed for use in this study was based on the same TEKS objectives/standards as the actual TAAS tests. That is, it assesses the same comprehension skills using both fiction and non-fiction passages that are used on the TAAS tests. It is closely patterned after the TAAS tests that have been released by the *Texas Education Agency*.

The TAAS Practice Test included a total of seven reading selections with six test items for each selection (a total of 42 reading comprehension test items).

Table 7 summarizes the means and standard deviations of the scores on the pre-test and the post-test for the Grade 3 Theme 1 Assessment.

TABLE 7
Grade 3 Results: Theme 1

Grade Three	**Theme 1 Assessment (30 test items)**			
	Lowest Score	**Highest Score**	**Mean Score**	**Standard Deviation**
Pretest	2	30	23.52	7.13
Posttest	5	30	26.64	4.90

At grade 3 the mean *Theme One Assessment* scores improved from 78% correct to 87% correct after instruction. This increase was highly significant ($t=8.346$; $p < .0001$).

Table 8 summarizes the means and standard deviations of the scores on the pre-test and the post-test for the Grade 3 Theme 2 Assessment.

TABLE 8
Grade 3 Results: Theme 2

Grade Three	**Theme 2 Assessment (30 test items)**			
	Lowest Score	**Highest Score**	**Mean Score**	**Standard Deviation**
Pretest	2	30	24.04	6.97
Posttest	5	30	27.06	4.10

At grade 3 the mean *Theme Two Assessment* scores improved from 80% correct to 90% correct after instruction. This increase was highly significant ($t=8.876$; $p < .0001$).

Table 9 summarizes the means and standard deviations of the scores on the pre-test and the post-test for the Grade 3 Theme 2 Assessment.

TABLE 9
Grade Three Results: TAAS Practice Tests

Grade Three	**TAAS Practice Test (42 test items)**			
	Lowest Score	**Highest Score**	**Mean Score**	**Standard Deviation**
Pretest	5	42	23.12	8.05
Posttest	7	42	26.34	6.85

At grade 3 the mean *TAAS Practice Test* scores improved from 57% correct to 63% correct after instruction. This increase was highly significant ($t=6.767$; $p < .0001$).

TABLE 10

Grade 3	**Stanford Achievement Tests: Grade 3**			
	Lowest Score	**Highest Score**	**Mean Score**	**Standard Deviation**
Pretest: Word Study Skills	6	20	14.8	3.8
Posttest: Word Study Skills	5	20	16.3	3.6
Pretest: Reading Vocabulary	3	20	14.4	3.8
Posttest: Reading Vocabulary	5	20	15.7	3.3
Pretest: Reading Comprehension	5	29	20.4	6.1
Posttest: Reading Comprehension	7	30	22.4	6.1
Pretest: Total Reading	18	68	49.6	12.0
Posttest: Total Reading	20	70	60.0	11.3

A paired t-test for the three subtests and the total test score on the *Stanford Achievement Tests: Grade Three* resulted in a significant increase (Word Study Skills: t=6.936; p<.0001); (Reading Vocabulary: t=6.204; p<.0001); (Reading Comprehension: t=5.161; p<.0001); (Total Reading: t=8.626; p<.0001).

The percentage increases in *Stanford Achievement Test Scores: Grade Three* from pretest to posttest were: Word Study Skills from 74% to 83% correct; Reading Vocabulary from 72% to 79% correct; Reading Comprehension from 53% to 75% correct; and Total Reading from 71% to 86% correct.

The percent of gains on each of the tests is shown in Table 11:

TABLE 11
Summary of Test Score Increases

	Percent Correct on Pretest	Percent Correct on Posttest	Percent Gain from Pretest to Posttest
Grade/Test			
Kindergarten Reading Survey	58%	66%	+8%
Grade 1 Reading Survey	68%	86%	+18%
Stanford Achievement Test Grade 1: Total Score	67%	83%	+16%
Grade 2 Reading Survey	78%	85%	+7%
Stanford Achievement Test Grade 2: Total Score	79%	86%	+7%
Grade 3 Theme One Test	78%	87%	+9%
Grade 3 Theme Two Test	80%	90%	+10%
Grade 3 TAAS Test	57%	63%	+6%
Stanford Achievement Test Grade 3: Total Score	71%	86%	+15%
Averages	70%	80%	+10%

Summary of Results

- The consistent increases at every grade level from Kindergarten through Grade 3 *are* significant.
- Significant increases were found for every test and every subtest at every grade level. This provides substantial evidence of continued improvement in reading and reading sub-skills for the students in this study.
- Gains of this magnitude for such a brief period of instruction are quite remarkable considering that the teachers volunteered to teach the units and received only minimal in-service training.
- The increase on the TAAS Practice Test scores after only two Instructional Units is also significant. Since this assessment consists only of reading comprehension test items, it is clear that the instructional units produced significant gains in students' ability to read and comprehend—as well as with beginning reading skills. Increases of 10% on comprehension

tests are seldom found in the research literature. Skills tests often increase more significantly with concentrated focus than do comprehension scores.

- Some of the results may have shown even greater gains. However, there was a ceiling effect for some of the assessments. (Students scored perfect or almost perfect scores on the posttests thus limiting the gain scores.)
- The increases were greater for grade 1 than for grades 2 and 3. This result suggests (as do many studies of this sort) that getting programs established in the earliest grades provides the greatest possibility of success.
- It is also significant that no test scores stayed the same. They all increased. In a short-term study of this sort it is not uncommon to note some test scores that do not increase at all.